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F2brg Fish, Wildlife,
1998 and Parks. Region
Draft
environmental
assessment 40-Bar
Ranch Game Farm

DRAFT

ENVIRONMENTAL

ASSESSMENT

40-BAR RANCH GAME FARM EXPANSION

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TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	1
OBJECTIVES	1
PUBLIC PARTICIPATION	2
PROPOSED ACTION AND ALTERNATIVES	2
PURPOSE AND NEED OF THE PROPOSED ACTION	5
ROLE OF FWP AND DOL	5
AFFECTED ENVIRONMENT	5
ENVIRONMENTAL CONSEQUENCES	9
EA CONCLUSION	11
MITIGATION MEASURES	11
 PART I. GAME FARM LICENSE APPLICATION INFORMATION	 14
 PART II. ENVIRONMENTAL REVIEW	 17
EA DEFINITIONS	17
PHYSICAL ENVIRONMENT	18
Land	18
Air	20
Water	22
Vegetation	25
Fish and Wildlife	27
HUMAN ENVIRONMENT	32
Noise Effects	32
Land Use	33
Risk/Health Hazards	34
Community Impact	36
Public Services/Taxes	37
Aesthetics/Recreation	38
Cultural and Historical Resources	39
SUMMARY EVALUATION OF SIGNIFICANCE	41
 PART III. NARRATIVE EVALUATION AND COMMENT	 44
 PART IV. EA CONCLUSION	 46

FIGURES

FIGURE 1 Site Map and Land Ownership	3
FIGURE 2 Land Cover and Surface Water	4
FIGURE 3 Big Game Winter Range	8

APPENDICES

APPENDIX A	PRIVATE PROPERTY ASSESSMENT CHECKLIST
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SUMMARY

ENVIRONMENTAL ASSESSMENT PROPOSED 40-BAR RANCH GAME FARM EXPANSION

INTRODUCTION

Montana Fish, Wildlife and Parks (FWP) is required to perform an environmental analysis in accordance with the Montana Environmental Policy Act (MEPA) for each proposal for projects, programs, legislation, and other major actions of state government significantly affecting the quality of the human environment (Administrative Rules of Montana [ARM] 12.2.430). FWP uses environmental assessments (EAs) in the game farm licensing process to identify and evaluate environmental impacts of a proposed game farm. EAs also determine whether the impacts would be significant and whether, as a consequence, FWP would perform a more detailed environmental impact statement (EIS).

When preparing an EA, FWP reviews environmental impacts of the Proposed Action, impacts of the No Action Alternative, and impacts of other alternative actions which include recommended and/or mandatory measures to mitigate the project's impacts. A mitigated EA includes alternatives with enforceable requirements (stipulations) which reduce impacts of the Proposed Action. The EA may also recommend a preferred alternative for the FWP decision maker.

Based upon its review of the 40-Bar Ranch Game Farm Expansion, FWP has prepared a mitigated EA.

OBJECTIVES

This EA has been prepared to serve the following purposes in accordance with FWP MEPA rules (ARM 12.2.430):

- to ensure that FWP uses natural and social sciences in planning and decision making;
- to be used in conjunction with other agency planning and decision-making procedures to make a determination regarding the Proposed Action;
- to assist in the evaluation of reasonable alternatives and the development of conditions, stipulations, and modifications to the Proposed Action,
- to determine the need to prepare an EIS through an initial evaluation and determination of the significance of impacts associated with the Proposed Action;
- to ensure the fullest appropriate opportunity for public review and comment on the Proposed Action; and
- to examine and document the effects of the Proposed Action on the quality of the human environment.

PUBLIC PARTICIPATION

Public involvement in the Environmental Assessment (EA) process includes steps to identify and address public concerns. The Draft EA will be available for public review and comment from January 30, 1998 until 5 pm February 20, 1998 from the Region 3 FWP office at the address listed below. A Public Meeting will be held at 7:00 pm on February 11, 1998 at the Wisdom Ranger District. Submit all comments regarding this EA to the same address.

40 Bar Ranch Game Farm Comments
c/o Fish, Wildlife and Parks
1820 Meadowlark Lane
Butte, MT 59701
(406) 494-2082

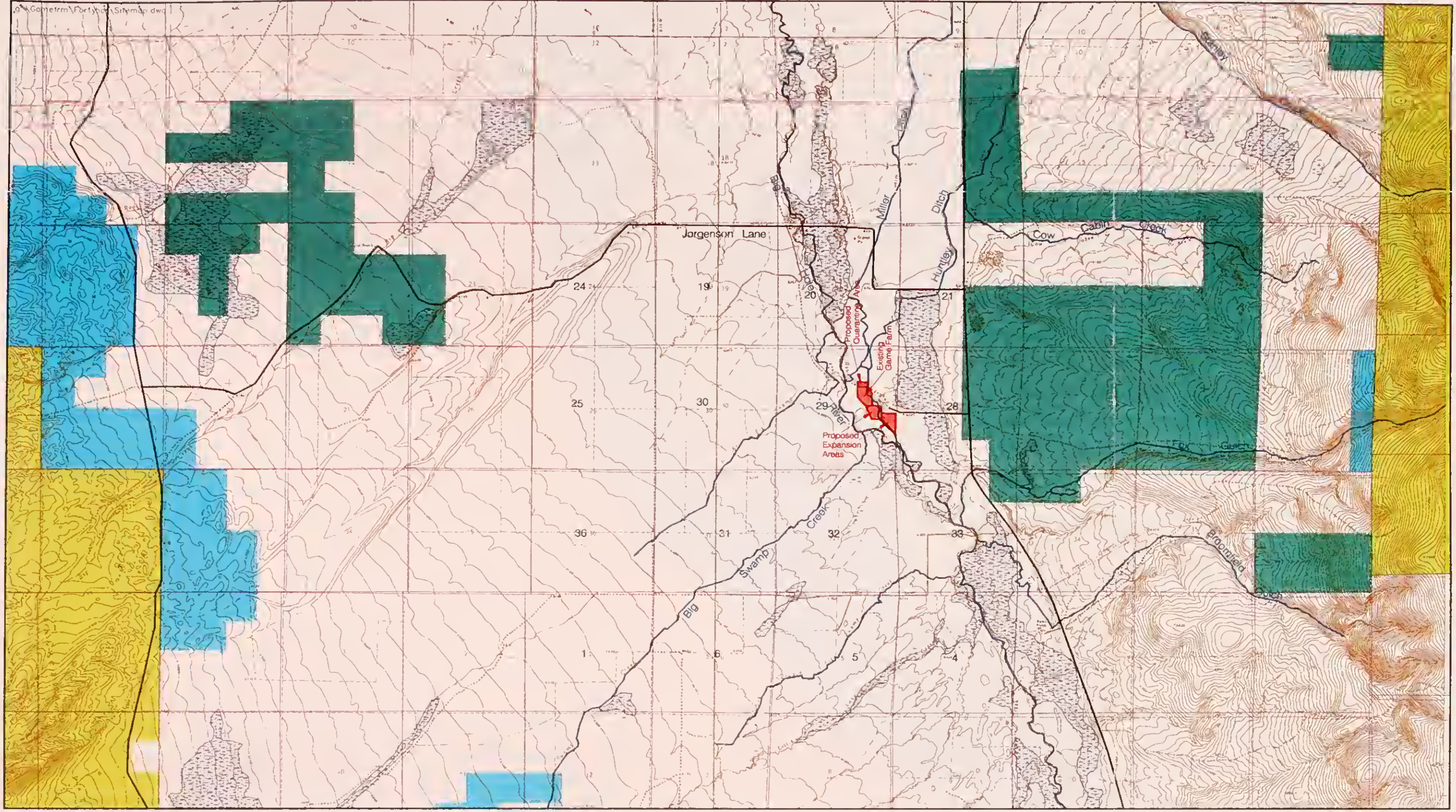
PROPOSED ACTION AND ALTERNATIVES

PROPOSED ACTION

The FWP received a completed application November 13, 1997 from Russell, Melvin and Doug Peterson to expand the 40-Bar Ranch Game Farm. The 40-Bar Ranch is situated in Beaverhead County, Montana in the Big Hole River valley (Figure 1). The nearest towns are Wisdom, about 11 miles north of the ranch, and Jackson, about 6 miles south of the ranch.

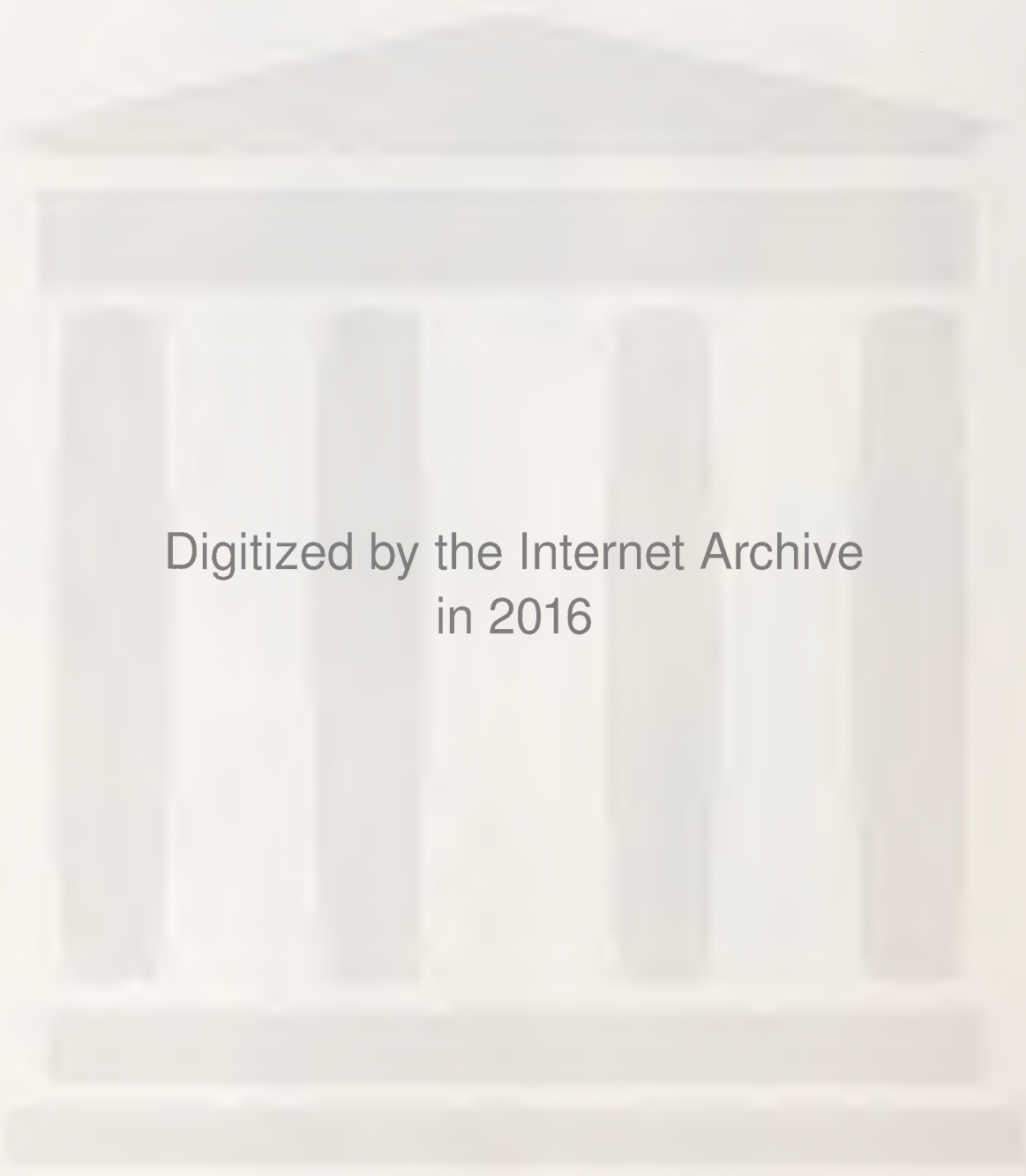
The Proposed Action consists of expanding the 40-Bar Ranch Game Farm from an existing 10 acres to 22 acres by adding two separate enclosures (pens) of about 4 and 8 acres (Figures 1 and 2). The westernmost 4-acre expansion pen would serve primarily as a corridor to connect the existing game farm to the easternmost higher elevation 8-acre expansion pasture. No additional animals are proposed for the expansion area. The existing game farm is licensed to contain 60 head of elk at full capacity. The expansion pens would adjoin the existing game farm pens through gated entry. A quarantine and handling facility plan is being administered separately by the Montana Department of Livestock (DoL). Fence construction would be in accordance with game-proof requirements of FWP under ARM 12.6.1503A unless a waiver is granted by FWP to construct a game-proof fence of an alternative design. The applicant would breed, sell, and dispose of domestic elk in accordance with Montana game farm and disease control requirements stipulated in Montana statute and administrative rules.

The Proposed Action includes two measures to mitigate potential problems in providing a game-proof fence within the game farm expansion: (1) where the westernmost proposed pen would cross a major irrigation ditch, the fence would be an adjustable steel structure to allow for variations in flow height in the ditch and prevent ingress of wild animals (similar to design used for existing pen); and (2) snow removal would be performed along the perimeter fence during winters of high snowpack if the height of the fence above the compacted snow level becomes sufficiently reduced to permit ingress of wild ungulates into the enclosure or egress of game farm animals.



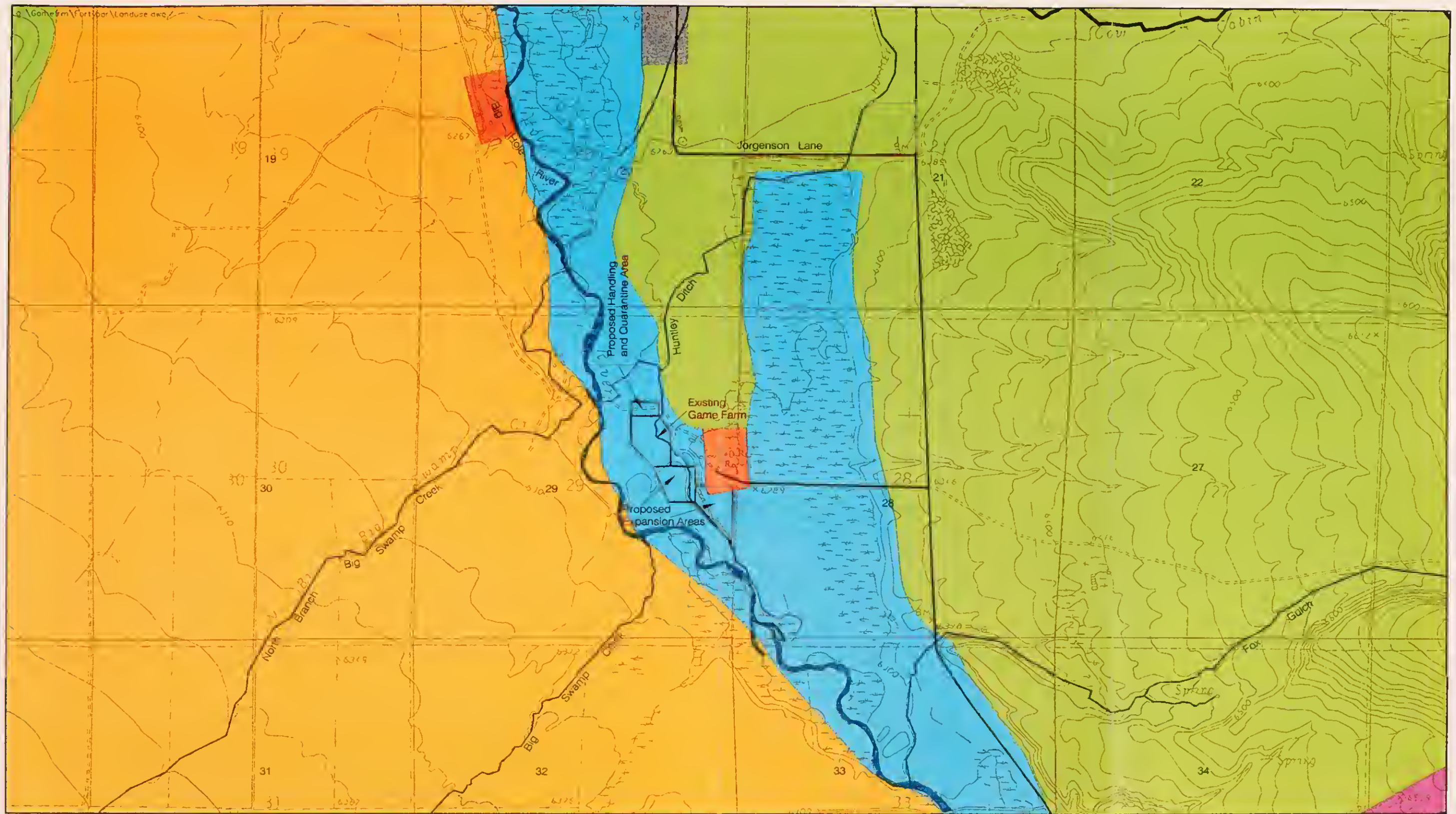
-  National Forest
-  Public Lands
-  State of Montana
-  Marsh

Note: Ownership Data Derived From
Bureau of Land Management
Montana Public Lands, 1:100000
Scale Quadrangles. Source Date 1975.



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- Transportation/Utility
- Crop/Pasture
- Other Agriculture
- Grass Rangeland
- Wetland
- Mines/Quarries

Note: Land Use/Land Cover Data For Information Presented On This Map Was Derived From U.S. Geological Survey's Geographic Information Retrieval And Analysis System Files At A Scale Of 1:250,000. Source Data is 1984 (Dillon)

ALTERNATIVES

One alternative (No Action Alternative) is evaluated in this EA. Under the No Action Alternative, FWP would not issue a license to expand the existing game farm as proposed. Therefore, only the existing game farm would continue to be utilized for up to 60 elk. Implementation of the No Action Alternative would not preclude other activities allowed under local, state and federal laws to take place at the proposed game farm expansion area.

PURPOSE AND NEED OF THE PROPOSED ACTION

The 40-Bar Ranch Game Farm expansion would continue to be a commercial enterprise that provides antlers and trophy sales, as well as produce elk breeding stock to the game farm market.

ROLE OF FWP AND DEPARTMENT OF LIVESTOCK

FWP is the lead agency in preparing this EA for the proposed project. This document is written in accordance with the Montana Environmental Quality Council (EQC) MEPA Handbook and FWP statutory requirements for preparing an EA under Title 75, Chapter 1, Part 2 Montana Code Annotated (MCA) and FWP rules under ARM 12.2.428 et seq.

FWP shares regulatory responsibilities for new and expanding game farms with DoL. The DoL is responsible for regulating the health, transportation and identification of game farm animals. During the application process, all quarantine area plans and specifications are submitted to DoL for approval and inspection of the proposed quarantine facility. No licenses are issued without such approval and inspection.

AFFECTED ENVIRONMENT

The 40-Bar Ranch is situated in Beaverhead County, Montana, along the Big Hole River, at an elevation of about 6,280 feet above mean sea level (**Figure 1**). The nearest towns are Wisdom and Jackson, located approximately 11 miles north and 6 miles south of the ranch, respectively.

The existing game farm consists of two connected pens that cover an area of approximately 10 acres, with attached holding pens and quarantine facility. It is located in the low-lying valley bottomland approximately 500 feet east of the Big Hole River. Several irrigation ditches extend through this area and periodically flood the low-lying areas during spring runoff. Groundwater is shallow and contributes to the spring flooding conditions.

The existing game farm fence is constructed of round wooden posts that are set in the ground to a stickup height of approximately 3 feet; smaller diameter round wooden posts are then nailed to the base posts to provide a total height of about 8 feet. Due to shallow groundwater, periodic flooding conditions, and freeze/thaw, some of the posts experience heaving problems that require occasional pounding to replace to proper depth (M. Peterson, pers. comm., 1997). Part of the existing perimeter fence would become an interior fence where the proposed expansion area would adjoin the existing pen.

The following sections summarize the primary environmental resources in the project area.

LAND RESOURCES

The 40-Bar Ranch game farm is located approximately 500 feet east of the Big Hole River. A portion of the proposed expansion area is located at the same elevation as the existing game farm which reportedly floods occasionally during periods of high water. Topography of the proposed expansion is gently sloping to level. Current use of the expansion area is irrigated, native pasture. The Huntley Ranch irrigation ditch crosses through the westernmost proposed expansion pen.

Quaternary-age alluvium associated with the Big Hole River underlies the proposed expansion area. The U.S. Geological Survey topographic map of the area indicates that much of the ground in the floodplain of the Big Hole River surrounding the ranch is wet and marshy. As a result of the marshy conditions, peat is found in the surface interval. Generally, mineral soils are loamy at the surface and overly gravelly, sandy loams. Depth to water is shallow, ranging from near ground surface to 6 feet below the surface. Drainage is somewhat poor in soil types that are included in this soil association.

WATER RESOURCES

The proposed game farm expansion area is located in the valley bottom of the Big Hole River. The westernmost proposed game farm expansion pen is located within the floodprone area adjacent to the Big Hole River; whereas, the easternmost pen is immediately adjacent to and 1 to 2 feet higher than the floodprone area. Flooding occurs from the river and from irrigation ditches that extend through the area. Shallow groundwater also contributes to flooding conditions because the soil becomes saturated quickly. The existing and proposed game farm areas are within mapped wetland areas (**Figure 2**).

A 20-foot wide irrigation ditch (Huntley Ditch) extends through the westernmost proposed pen and the existing game farm site (**Figure 2**). A smaller stockwater ditch (3 feet wide) is located in the easternmost proposed pen. The larger ditch flows year-round, although flow rates are low during non-irrigation periods. The smaller ditch flows only periodically when needed. Water in these ditches, which comes from the Big Hole River, would be the drinking water source for the proposed elk pens. Water in these ditches generally is consumed, evaporates, or infiltrates into the groundwater system and does not directly return to the Big Hole River. A small portion of the water may directly enter the river via small tributary drainages or ditches that cross the primary ditches. The 40-Bar Ranch has water rights for surface water (ditches) and for groundwater from eight wells in Section 29, T4S, R15W. The ditch water is for irrigation, and the wells are used for stock watering, except one well is used for domestic purposes.

VEGETATION RESOURCES

The proposed game farm expansion is located on the bottomlands of the Big Hole River and is primarily comprised of an 8 acre grassland meadow and a 4 acre open willow/sedge riparian area (**Figure 2**). The grassland meadow is dominated by native and introduced pasture grasses and can be flood irrigated. This section of the proposed expansion area would be fenced separately as a single pasture. It is slightly higher in elevation (1 to 2 feet) than the proposed adjacent willow/sedge riparian pasture and the existing game farm enclosure.

The proposed riparian area pasture is dominated by native sedges and willows. The willows in this area have been recently thinned with heavy equipment. The proposed riparian pasture is crossed by a large irrigation ditch which maintains at least some flow during all seasons. However, the flow during non-irrigation periods is not sufficient to support a well-developed aquatic community. The presence of willows

and sedges in this pasture are indicative of seasonal flooding from snow melt and irrigation water. Both proposed expansion areas are currently grazed by cattle during non-irrigation periods.

WILDLIFE RESOURCES

The proposed game farm is located in the Big Hole River Valley in southwestern Montana and is within summer/fall elk range (**Figure 3**). Approximately 600 to 700 elk summer along the bottomlands of the Big Hole River between Highway 43 on the north and the town of Jackson to the south. As many as 200 elk may occur within the immediate vicinity of the game farm area. There is some dispersal of elk out of this area into adjacent mountain ranges during the rut and hunting season. As snow accumulates during late fall and winter, elk migrate out of the Big Hole Valley and many of these elk move into the North Fork of the Salmon River in Idaho. Some elk may also move to lower elevations along the lower Big Hole River. In general, the Big Hole Valley and adjacent mountains are too high an elevation for significant numbers of elk to winter in this area. Due to the extensive seasonal migrations of these elk, it is considered an interstate herd.

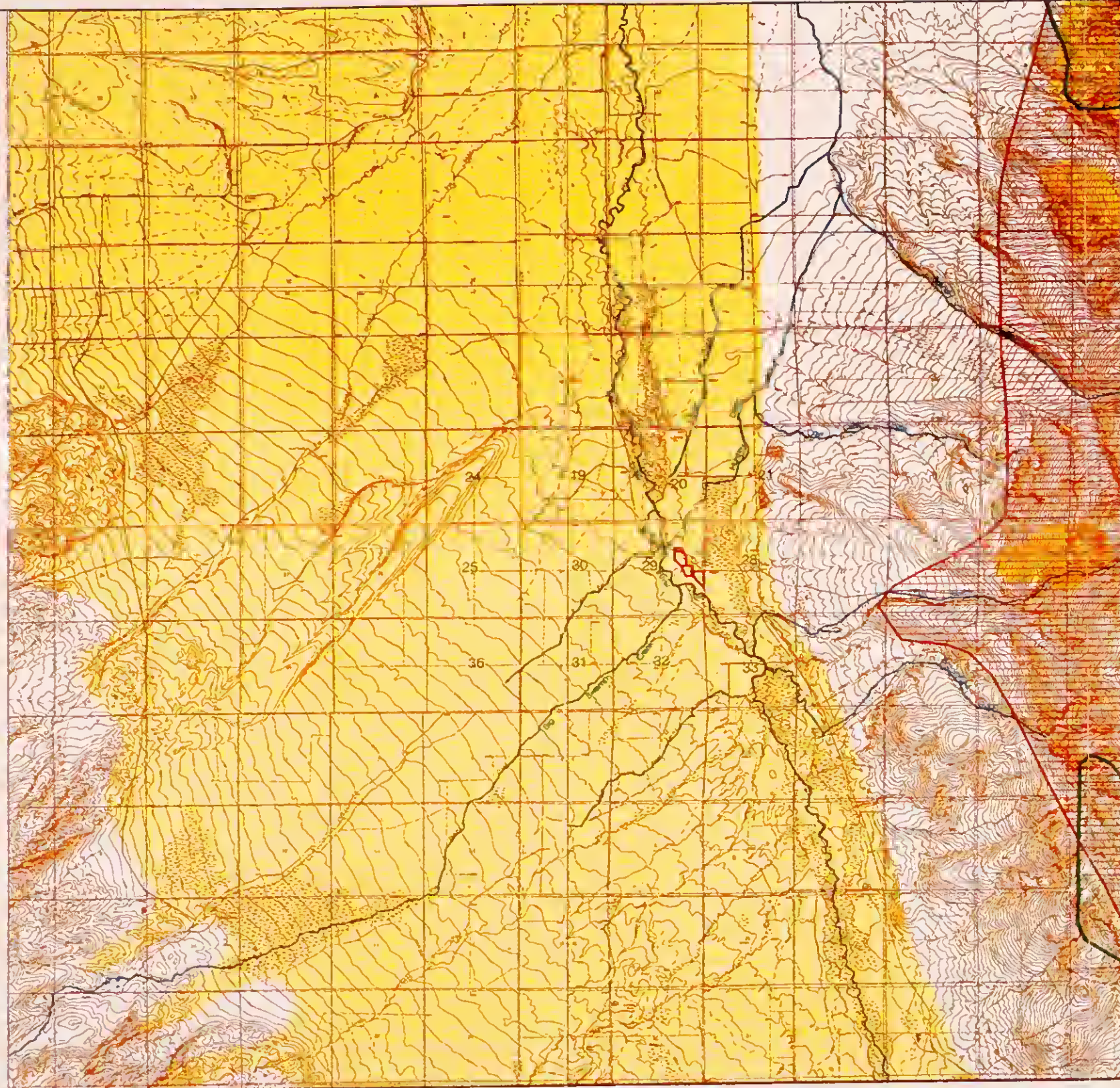
The upper Big Hole Valley is considered one of the top three areas in Montana for moose (**Figure 3**). More than 100 moose utilize the willow/sedge bottomlands of the Big Hole River as year-long range. Moose in the Big Hole Valley may also move into adjacent mountain ranges and make use of the coniferous habitats and riparian habitat associated with mountain streams. Although these moose tend to be solitary and range over extensive areas, up to 20 individuals may be observed in a group in willow bottomland habitat during winter.

The Big Hole River valley is low density white-tailed deer and mule deer summer range (**Figure 3**). During most winters, this area is too high an elevation for deer to successfully winter in. Resident populations of black bears and mountain lions occur in the Big Hole Valley and adjacent mountain ranges. Although these species are generally associated with coniferous habitat and rough topography, they are capable of using the willow bottomlands along the Big Hole River on an opportunistic basis.

Bald eagles (Federally listed threatened species) are migratory through the Big Hole Valley during fall and spring. Bald eagles are seasonal residents of the Big Hole Valley as well. No bald eagle nests are known to occur within the proposed game farm expansion area; however, an abandoned/inactive bald eagle nest exists 9 to 10 miles northeast of the project area. Migratory peregrine falcons may also pass through this area during fall and spring. Gray wolves (threatened) have been documented in the immediate area of the proposed game farm expansion area.

These wolves are associated with wolves recently reintroduced to Idaho and are classified as experimental and non-essential by the U.S. Fish and Wildlife Service. Grizzly bears (Federally listed threatened species) potentially may pass through the Big Hole Valley as transient individuals on rare occasions.

The Big Hole River contains arctic grayling. This native fish species is classified as a candidate for Federal listing as threatened species with a warranted but precluded ruling. The Fish and Wildlife Service has given Montana Fish, Wildlife and Parks until 2002 to recover the grayling in the Big Hole River and other Montana rivers. Grayling occur in the Big Hole River with a patchy distribution. Relatively high grayling density occurs near Wisdom and Jackson but that portion of the Big Hole River adjacent to the proposed game farm expansion contains few grayling. Dewatering of the Big Hole River during late summer to provide stock water has been identified as a major impact on the Big Hole grayling. There are no other Federally listed threatened and endangered species expected to occur in this area.



- Moose Overall Distribution and Winter Range
- Elk Overall Distribution and Winter Range
- Mule Deer Overall Distribution and Winter Range

Note: Wildlife Data Presented On This Map Was Derived From Information Services Unit, Montana Fish, Wildlife, and Parks Digitized At A Scale Of 1:250,000. Source Data is 1995

Big Game Distribution
Proposed Game Farm Expansion EA
40-Bar Ranch
Wisdom, Montana
FIGURE 3

ENVIRONMENTAL CONSEQUENCES

Only resources that have potential adverse effects from the Proposed Action are summarized in this section. A detailed discussion of environmental consequences is contained in *Part II* of this EA.

LAND RESOURCES

The Proposed Action of raising 60 elk on 22 acres may cause excessive soil compaction, especially in concentration areas used for winter feeding and in wet areas where standing water is present for an extended period of time. Soil compaction coupled with high densities of animals can result in the reduction of plant cover and an increase in runoff from affected areas.

WATER RESOURCES

Increased runoff and erosion would be expected on some areas in the proposed game farm where elk would regularly traverse or use areas of standing water or soil saturation. Erosion problems also would occur along the irrigation/stock ditches where elk may concentrate to obtain drinking water or traverse. Domestic elk fecal matter and nutrient-enriched water may have an effect on the quality of groundwater and/or surface water in the vicinity of the game farm, primarily during periods of snowmelt, flooding, and major precipitation events. Due to existing cattle grazing in the expansion area, the proposed change to elk grazing is not expected to significantly change existing conditions with respect to water resources.

VEGETATION RESOURCES

The willow/sedge pasture of the proposed game farm expansion has already been cleared of many willows to accommodate the proposed fence construction in this area. Based on the impacts observed at the existing game farm, browsing of willows by elk in the proposed willow/sedge pasture would result in additional impacts to willows. Intensive browsing can alter willow growth form and possibly result in loss of some willows. In addition, the herbaceous vegetation in both the proposed willow/sedge and grassland meadow pastures may be substantially altered by elk grazing. The existing game farm enclosure contains barren areas devoid of vegetation, and the grasses and sedges in other areas are intensively grazed. Depending upon stocking density and season of use, the proposed expansion pastures may show similar impacts to herbaceous vegetation.

These impacts may be mitigated to a certain degree if actual elk numbers remain between 20 and 30 animals and a deferred grazing system is developed for the existing and proposed pastures. However, if elk numbers increase to the proposed level (60), vegetation within the expansion pastures would be expected to look similar to the existing pasture described above. Overall, the alteration of these plant communities is considered minor due to the limited size of the proposed game farm expansion area.

The overall proposed stocking rate of 0.55 acres per adult elk is likely to exceed the productive potential of the existing game farm and the proposed game farm expansion. An estimated 88,000 pounds of forage may be produced within the existing game farm and the proposed expansion areas. Over an extended period, productivity of this site would be expected to decrease due to intensive grazing and browsing by domestic elk. Approximately 160,600 pounds of forage would be required to sustain 40 adult elk for one year. Under proper grazing management (50% forage utilization), the proposed game farm would yield only about 44,000 pounds of forage. Supplemental feed for the elk would be required during a considerable portion of the year.

The proposed game farm site contains very few noxious weeds and is currently dominated by native vegetation or tame pasture grasses purposely planted in this area. Under the intensive stocking densities proposed for this game farm, it is possible that some areas of bare soil may develop within the proposed expansion area and increase the opportunity for establishment of weeds.

WILDLIFE RESOURCES

Wild elk, moose and deer would be excluded from approximately 12 additional acres of bottomland habitat if the game farm is expanded. This habitat is widely distributed along the Big Hole River and the loss of 12 additional acres of suitable elk, moose and deer habitat will not be a significant loss. In addition, the proposed expansion area is immediately adjacent to the 40-Bar Ranch headquarters and this area probably receives very little use by wild ungulates due the presence of people, dogs, and livestock.

Some nutrient-enriched runoff water (effluent) during snow melt and major storm events is expected to occur where elk might be fed or otherwise concentrate. The proposed expansion area is currently used for cattle grazing and there would be no net increase in nutrient enriched runoff over the existing conditions. There would be no expected impacts to aquatic systems above existing conditions due to effluent from the proposed game farm expansion.

Over the long-term, elk would be expected to severely hedge or kill many of the willows in the willow/sedge pasture. There would be a minor loss of habitat for neotropical migrant bird species.

There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease or meningeal worm, and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. Ingress of wild elk or deer would likely result in the destruction of the trespassing animals. Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) affect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well. Although release of a contagious disease in the wild could severely impact native wildlife populations, the risk of disease transmission from domestic elk to wild elk is has been considered low and can be minimized by routine disease surveillance of the herd and maintenance of game proof fences.

CUMULATIVE EFFECTS

The Proposed Action would not result in potential impacts that are individually minor but cumulatively considerable. The proposed expansion area would replace the existing cattle grazing activities which likely does cause increased sediment and nutrient loading to surface water in the valley. The replacement of cattle with elk in the proposed game farm area, however, is not expected to cause additional significant impacts to the environment. Cumulative effects from past, present and reasonably foreseeable activities in all resource areas would be similar to those described for the Proposed Action.

EA CONCLUSION

MEPA and game farm statutes require FWP to conduct an environmental analysis for game farm licensing as described in the Introduction of this Summary. FWP prepares EAs to determine whether a project would have a significant effect on the environment. If FWP determines that a project would have a significant impact that could not be mitigated to less than significant, the FWP could prepare a more detailed EIS before making a decision.

Based on the criteria evaluated in this EA, an EIS would not be required for the 40-Bar Ranch Game Farm. The appropriate level of analysis for the Proposed Action is a mitigated EA because all impacts of the Proposed Action have been accurately identified in the EA, and all identified significant impacts would be mitigated to minor or none.

MITIGATION MEASURES

REQUIRED MITIGATION

The Proposed Action includes several measures to mitigate potential problems in providing a game-proof fence at the 40-Bar Ranch Game Farm site, as described below:

- Special heavy-duty, adjustable steel fencing would be constructed where the proposed game farm fencing would cross the Huntley ditch. This fencing would be of similar construction to that used over the ditch in the existing game farm. This fence structure would allow adjustment of the fence height as water depth changes in the ditch. Ingress of wild animals into the game farm area would be prevented using this fence design, and potential damage to the fence from woody debris would be minimized.
- Snow removal would be performed along the perimeter fence during winters of high snowpack if the height of the fence above the compacted snow level becomes sufficiently reduced to permit ingress of wild ungulates into the enclosure.

Mitigation measures described below address both minor and significant impacts. FWP would require stipulations to mitigate all potentially significant impacts resulting from the Proposed Action. Potential minor impacts from the Proposed Action are addressed as mitigation measures that are strongly recommended to remain in compliance with state and federal environmental laws.

REQUIRED STIPULATIONS

The following stipulations are designed to mitigate significant impacts identified in the EA to below the level of significance:

- Report the ingress of any wild game animals or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress was achieved.*

This stipulation is imposed to mitigate potentially significant risk to wildlife posed by the proposed game farm. Risk to wildlife from contact between game farm animals and wild game is potentially significant due to the fact the site would be located in an area currently utilized by wild game.

The information provided by the stipulation would help both the applicant and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife to below significant.

- (b) *Corner posts and brace posts in the westernmost 4-acre expansion pen must be constructed of steel and set in ground at least 3.5 feet below grade and backfilled with concrete to mitigate risk to fence integrity from water/frost heaving, erosion, and rotting.*

This stipulation is required to mitigate potentially significant fence integrity problems as evidenced by the existing game farm fence. The game farm site is located in an area of shallow groundwater, periodic flooding, and freeze/thaw conditions. The required corner and brace post design would put a non-rotting post below the expected frost line, with a concrete backfill that would provide a footing for additional weight and cohesion to eliminate heaving and erosion problems. This mitigation measure would prevent ingress/egress occurrences due to fencing integrity concerns.

RECOMMENDED MITIGATION MEASURES:

The following mitigation measures address minor impacts identified in the EA that are likely to result from the Proposed Action.

Land Resources

- Use posts that will not readily corrode or rot for all fence supports.
- Maintain a reasonable stocking rate within the game farm enclosures to minimize changes in soil structure and minimize potential increases in runoff and water erosion from disturbed ground. A "reasonable stocking rate" is defined under *EA Definitions*, in Part II of the Environmental Review.

Air Resources

- If waste is land-applied, spread waste during cool weather or in the morning during warm, dry weather.
- Carcasses of animals buried on the game farm should be covered with a minimum of 2 feet of soil and buried at a distance greater than 200 feet from a highway and greater than one-mile from any residence. Carcasses may also be sent to a licensed municipal landfill if approved by the landfill operator. Carcasses can not be disposed of in water bodies, roads, or ditches.

Water Resources

- Maintain a reasonable stocking rate in the game farm area to mitigate potential impacts from erosion and fecal matter. Potential water quality impacts also could be minimized by disposing dead animals and excess fecal material at a site that is isolated from surface water and groundwater (disposal must meet county regulations for solid waste).
- For any areas that may have erosion and sedimentation problems, utilize best management practices (BMPs) where surface water could enter the ditches and ultimately the Big Hole River. The BMPs may include earth berms, straw bale dikes, vegetative buffer zones, and/or silt fences.

Vegetation Resources

- Provide supplemental feed to elk to reduce the probability of overgrazing the herbaceous layer.
- Prohibit elk grazing in flooded pens and areas of heavy soil saturation.

Fish and Wildlife Resources

- Store hay, feed, and salt away from exterior fences or enclosed in buildings.
- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence.
- Remove dead animals, excess fecal material, and waste feed from the game farm and place at an approved site not likely to be used by humans, domestic animals and wild animals.
- Inspect the exterior game farm fence on a regular basis including immediately after events likely to damage the fence, to insure its integrity with respect to trees, frost and water heaving, corrosion, burrowing animals, predators and other game animals.
- If fence integrity or ingress/egress becomes a problem, adjustment of fence requirements to include double-fencing, improved post design, or increased fence height may become necessary.
- Surface water should be conserved during periods of low flow (i.e., July through September) to help maintain flow in the Big Hole River for fisheries, especially grayling. Measures to conserve water include using well water instead of ditch water for elk water source, and utilizing the westernmost pastures during low flow conditions to take advantage of yearround flow in the larger Huntley ditch.
- Risk of disease epidemic or heavy parasite infections among domestic elk can be minimized by maintaining a reasonable domestic elk stocking rate in relation to the enclosure size, and management of manure in accordance with DEQ (1996) guidance.

Cultural Resources

- Conduct a cultural resource inventory in order to determine whether or not cultural properties exist and if they will be affected by the Proposed Action.
- Mitigate impacts to cultural resources by stopping work in the area of any observed archeological artifact. Report discovery of historical objects to:

Montana Historical Society
Historic Preservation Office
1410 8th Avenue; P.O. Box 201202
Helena, Montana 59620
(406) 444-7715.

If work stoppage in the area containing observed artifacts is not possible, record the location and position of each object, take pictures and preserve the artifact(s).

PART I. GAME FARM LICENSE APPLICATION***ENVIRONMENTAL ASSESSMENT CHECKLIST***

Montana Fish, Wildlife & Park's authority to regulate game farms is contained in sections 87-4-406 through 87-4-424, MCA and ARM 12.6.1501 through 12.6.1519.

1. **Name of Project:** 40-Bar Ranch Game Farm Expansion

Date of Acceptance of Completed Application: November 13, 1997

2. **Name, Address and Phone Number of Applicant(s):**

Russell Peterson (406) 834-3113
 Melvin Peterson (406) 834-3104
 Doug Peterson (406) 834-3101

Wisdom, Montana 59761

3. **If Applicable:**

Estimated Construction/Commencement Date: May 1998

Estimated Completion Date: Summer 1998

Is this an application for expansion of existing facility or is a future expansion contemplated?

This is an application to expand an existing facility.

4. **Location Affected by Proposed Action (county, range and township):**

Beaverhead County

NE¼ SE¼ and SE¼ NE¼, Section 29, Township 4 South, Range 15 West

5. **Project Size:** Estimate the number of acres that would be directly affected that are currently:

(a) Developed:	(d) Floodplain... <u>4</u> acres
residential..... acres	
industrial..... acres	(e) Productive:
	irrigated cropland. <u>8</u> acres
(b) Open Space/Woodlands/Areas.... acres	dry cropland..... acres
	forestry..... acres
	rangeland..... acres
(c) Wetlands/Riparian Areas..... acres	other..... acres

6. Map/site plan:

The following maps are included in the introductory summary of this EA:

- Figure 1:** Site Map Showing Land Ownership
Figure 2: Site Map Showing Land Use and Land Cover
Figure 3: Site Map Showing Big Game Winter Range

7. Narrative Summary of the Proposed Action or Project including the Benefits and Purpose of the Proposed Action:

The FWP received a completed application November 13, 1997 from Russell, Melvin and Doug Peterson to expand the 40-Bar Ranch Game Farm. The 40-Bar Ranch is situated in Beaverhead County, Montana, along the Big Hole River. The nearest towns are Wisdom and Jackson, located approximately 11 miles north and 6 miles south of the ranch, respectively (**Figure 1**).

The Proposed Action consists of expanding the 40-Bar Ranch elk game farm from 10 acres to 22 acres. The proposed expansion consists of adding two separate enclosures (pens) of about 4 and 8 acres that, when added to the existing 10-acre permitted pens, could contain 60 head of elk at full capacity. The expansion pens would adjoin the existing game farm pens through gated entry. A replacement quarantine and handling facility would be constructed for the expanded game farm.

The applicant proposes to provide a perimeter fence for the proposed expansion area consisting of 8-foot high, 6-inch mesh, high-tensile big game fencing. Corner posts and brace posts would consist of 12-foot long, 6- to 8-inch diameter treated wooden posts, set 3.5 feet into the soil. Corner and brace posts in the westernmost 4-acre expansion pen are required to be constructed of steel and must be set in concrete. Support posts would be spaced at no greater than 24-foot intervals and would consist of 12-foot long, 3- to 4-inch diameter treated wooden posts. All exterior gates would be constructed of 2-inch diameter structural metal tubing, 8 feet high, and reinforced with cattle paneling. Gates would have a double latch and single chain lock. Fence construction would be in accordance with requirements of FWP under ARM 12.6.1503A unless a waiver is granted by FWP to construct a game-proof fence of an alternative design.

The Proposed Action includes several measures to mitigate potential problems in providing a game-proof fence within the game farm expansion. Snow removal would be performed along the perimeter fence during severe winters if the height of the fence above the compacted snow level becomes sufficiently reduced to permit ingress of wild ungulates into the enclosure to gain access to supplemental feed provided the game farm animals. Where the westernmost proposed pen would cross a major irrigation ditch, the fence would be an adjustable steel structure to allow for variations in flow height in the ditch and prevent ingress of wild animals (similar to design used for existing pen).

The proposed expansion area is owned by Russell, Melvin and Doug Peterson. The Peterson family has been in the cattle ranching business in the Big Hole Valley for over 100 years. The applicants currently operate the 40-Bar Ranch Game Farm and live adjacent to the proposed expansion area.

The expanded 40-Bar Ranch Game Farm would be a commercial enterprise that provides antlers and trophy sales, as well as produce elk breeding stock to the game farm market. The applicant would breed, sell, and dispose of domestic elk in accordance with Montana game farm and disease control requirements stipulated in Montana statute and administrative rules.

8. **Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction:**

(a) **Permits:**

<u>Agency Name</u>	<u>Permit</u>	<u>Approval Date and Number</u>
Department of Livestock	approval of quarantine and handling facility	Pending

(b) **Funding:**

<u>Agency Name</u>	<u>Funding Amount</u>
none	

(c) **Other Overlapping or Additional Jurisdictional Responsibilities:**

<u>Agency Name</u>	<u>Type of Responsibility</u>
Montana Department of Livestock	disease control
Montana Department of Environmental Quality (DEQ)	water quality, air quality waste management
Montana State Historical Preservation Office (SHPO)	cultural resources
Montana Department of Natural Resources and Conservation (DNRC)	water rights
Natural Resource Conservation Service (NRCS)	soil conservation
Beaverhead County Conservation District	stream crossings
Beaverhead County Weed Control District	weed control

9. **List of Agencies Consulted During Preparation of the EA:**

Montana Department of Livestock
Montana Department of Environmental Quality
Montana State Historical Preservation Office
Montana Bureau of Mines and Geology
Montana Department of Natural Resources and Conservation
U.S. Department of Agriculture, Natural Resource Conservation Service
Beaverhead County Conservation District
U.S. Forest Service

REFERENCES:

Peterson, Russel, Melvin, & Doug. 1997. Application to Expand an Existing Game Farm completed October 9, 1997; 40-Bar Ranch, Wisdom, Montana.

PART II. ENVIRONMENTAL REVIEW

This section of the EA presents results of an environmental review of the Proposed Action. The assessment evaluated direct and indirect impacts and cumulative effects of the Proposed Action on the following resources of the physical environment: land, air, water, vegetation, fish and wildlife; and the following concerns of the human environment: noise, land use, human health risk, community impacts, public services and taxes, aesthetics and recreation, and cultural and historical resources. Impacts were determined to fall in one of four categories: unknown, none, minor and significant. For the purposes of this EA, and in accordance with ARM 12.2.429 through 12.2.431, these terms are defined as follows:

EA DEFINITIONS

Cumulative Effects: The collective impacts on the human environment of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impacts statement evaluation, or permit processing procedures.

Unknown Impacts: Information is not available to facilitate a reasonable prediction of potential impacts.

Significant Impacts: A determination of significance of an impact in this EA is based on individual and cumulative impacts from the Proposed Action. If the Proposed Action results in significant impacts that can not be effectively mitigated, FWP must prepare an EIS. The following criteria are considered in determining the significance of each impact on the quality of the human environment:

- severity, duration, geographic extent and frequency of occurrence of the impact;
- probability that the impact would occur if the Proposed Action occurs;
- growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative effects;
- quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- importance to the state and to society of each environmental resource or value that would be affected;
- any precedent that would be set as a result of an impact of the Proposed Action that would commit FWP to future actions with significant impacts or a decision in principle about such future actions; and
- potential conflict with local, state, or federal laws, requirements, or formal plans.

Reasonable Stocking Rate: The density of animals appropriate to maintain vegetative cover in pasture condition that minimizes soil erosion from major precipitation events and snowmelt. The methodology for determining reasonable stocking rate is presented under the evaluation for *Vegetation Resources*, in the Checklist EA of this document.

PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?			X		Yes	1(b)
c. Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?		X				

AFFECTED ENVIRONMENT:

The 40-Bar Ranch is situated in Beaverhead County, Montana, along the Big Hole River, at an elevation of about 6,280 feet above mean sea level. The nearest towns are Wisdom, about 11 miles north of the ranch, and Jackson, about 6 miles south of the ranch. The proposed expansion to the 40-Bar Ranch elk game farm would consist of two separate enclosures (pens) of about 4 and 8 acres, that, when added to the existing 10 acre game farm, could contain 60 head of elk at full capacity. The expansion pens would adjoin the existing game farm pens through gated entry.

Topography of the proposed expansion is gently sloping to level. The larger easternmost proposed expansion pen is positioned at a slightly higher elevation than the smaller pen and the existing pens. The smaller westernmost proposed pen would be located at the same elevation as the existing pens which are reported by the owner to flood occasionally during periods of high water. Current use of the expansion area is irrigated pasture.

Quaternary alluvium associated with the Big Hole River underlies the proposed expansion area (U.S. Geological Survey, 1955). There is no site specific geological or soil information available for the 40-Bar Ranch. The U.S. Geological Survey topographic map of the area indicates that much of the ground in the floodplain of the Big Hole River surrounding the ranch is wet and marshy.

Soil information is available from the Montana State Soil Geographic database (known as STATSGO). The soil data available in this database is a general soil association map developed by the National Cooperative Soil Survey (U.S. Department of Agriculture, 1994). While these data are not detailed enough to make soil interpretations at the county level, they can be used as a reference source where no other data are available.

The STATSGO soil association map unit for the Big Hole River Valley is the Slocum-Venable Family-Terric Cryofibrists. These soils form in floodplains and have a wide variety of textures. As a result of the marshy conditions, peat is found in several of the soil types belonging to this association in the surface interval. Generally, mineral soils are loamy at the surface and overly gravelly sandy loams. Depth to water is shallow, ranging from near the surface to six feet below the surface. As would be expected with floodplain soils, flooding occurs rarely to occasionally for brief to very long periods, generally during the period from April to June. Drainage is poorly drained in soil types that are included in this soil association.

PROPOSED ACTION:

- 1(b) The Proposed Action of raising 60 elk on 22 acres may cause excessive soil compaction, especially in concentration areas used for winter feeding and in wet areas where standing water is present for an extended period of time. Soil compaction coupled with high densities of animals can result in the reduction of plant cover and an increase in runoff from the affected areas.

NO ACTION:

The No Action Alternative would likely not affect the current condition of the property if the owners continue to use the property for raising hay and livestock.

CUMULATIVE EFFECTS:

As this area is used intensively for agricultural production, the cumulative effect of using the proposed area as a game farm is negligible. The proposed game farm does not contain any unique or significant soil or land resources.

COMMENTS:

Risk of corrosion to uncoated steel and rapid deterioration of wood posts is high due to the relatively high water table. This characteristic should be considered when designing the fence.

Required Stipulations: None

Recommended Mitigation Measures:

- Use posts that will not readily corrode or rot for all fence supports.
- Maintain a reasonable stocking rate within the game farm enclosures to minimize changes in soil structure and minimize potential increases in runoff and water erosion from disturbed ground.

REFERENCES:

U.S. Department of Agriculture, Natural Resource Conservation Service. 1994. Montana State Soil Geographic Database (STATSGO). Digital data available from <ftp://ftw.nrcs.usda.gov/pub/statsgo>.

U.S. Geologic Survey and Montana Bureau of Mines and Geology, 1955. Geologic Map of Montana, 1:500,000.

PHYSICAL ENVIRONMENT

2. AIR Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Emission of air pollutants or deterioration of ambient air quality?			X		Yes	2(a)
b. Creation of objectionable odors?			X		Yes	2(b)
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				

AFFECTED ENVIRONMENT:

The proposed game farm site is situated in a sparsely populated area with no apparent air quality problems. This area is not classified for air quality attainment status (DEQ 1997).

PROPOSED ACTION:

- 2(a) Impacts to air quality from fence construction and road use may result in short-term minor increases in particulate matter in ambient air.
- 2(b) Odor problems may result from waste management practices in areas where elk concentrate to feed. There are no residents besides the applicants within a 1-mile radius of the proposed game farm.

NO ACTION:

No impacts to air quality are expected to result from the No Action Alternative.

CUMULATIVE EFFECTS:

No additional impacts from past, present or reasonably foreseeable activities near the proposed game farm are anticipated.

COMMENTS:

Dust and odor are not expected to be of significant concern at the proposed game farm site due to the sparse population in this area. If dust and/or odor problems arise, mitigation measures can be implemented.

Required Stipulations: None

Recommended Mitigation Measures:

- Dust management activities include spraying water on unpaved roads during the dry season, vegetating exposed ground where possible, protecting fill piles from wind erosion, and limiting ground disturbance to only the area necessary to complete the job.

- Employ the following best management practices (BMPs) to reduce odor problems if they occur: (1) spread waste during cool weather or in the morning during warm, dry weather; and (2) cover buried animal carcasses on the game farm with a minimum of 2 feet of soil and at a distance greater than 1-mile from any residence; carcasses may also be sent to a licensed municipal landfill if approved by the landfill operator; carcasses should not be disposed of in or adjacent to water bodies, roads, and ditches. These and other BMPs are described in "Guide to Animal Waste Management and Water Quality Protection in Montana" (DEQ 1996).

REFERENCES:

Montana Department of Environmental Quality. 1997. Montana Air Quality Non-Attainment Areas. Revised January, 1997.

Montana Department of Environmental Quality (DEQ), 1996. Guide to Animal Waste Management and Water Quality Protection in Montana. Helena, MT.

PHYSICAL ENVIRONMENT

3. WATER Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X		Yes	3(a)
b. Changes in drainage patterns or the rate and amount of surface runoff?			X		Yes	3(a)
c. Alteration of the course or magnitude of flood water or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?			X		Yes	3(f)
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X		Yes	3(f)
i. Violation of the Montana non-degradation statute?		X				
j. Effects on any existing water right or reservation?		X				
k. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
l. Effects on other water users as a result of any alteration in surface or groundwater quantity?		X				

AFFECTED ENVIRONMENT:

The proposed game farm expansion area is located in the valley bottom of the Big Hole River. The westernmost proposed game farm expansion pen is located within the floodprone area adjacent to the Big Hole River; whereas, the easternmost pen is immediately adjacent to and 1 to 2 feet higher than the floodprone area. Flooding occurs from the river and from irrigation ditches that extend through the area. Shallow groundwater also contributes to flooding conditions because the soil becomes saturated quickly. The existing and proposed game farm areas are within mapped wetland areas (**Figure 2**).

A 20-foot wide irrigation ditch (Huntley Ditch) extends through the westernmost proposed pen and the existing game farm site (**Figure 2**). A smaller stockwater ditch (3 feet wide) is located in the easternmost proposed pen. The larger ditch flows year-round, although flow rates are low during non-irrigation periods. The smaller ditch typically flows only during the nonwinter seasons. Water in these ditches, which comes from the Big Hole River, would be the drinking water source for the proposed elk pens.

The 40-Bar Ranch has water rights for surface water (ditches) and for groundwater from eight wells in Section 29, T4S, R15W (Montana Department of Natural Resources and Conservation, 1997). The ditch water is for irrigation, and the wells are used for stock watering, except one well is used for domestic purposes.

PROPOSED ACTION:

- 3(a) Increased runoff and erosion would be expected on some areas in the proposed game farm expansion where elk would frequently traverse or use areas of standing water or soil saturation. Erosion problems also would occur along the ditches where elk may concentrate to obtain drinking water or traverse. Increased erosion and runoff from most of the expansion area likely would not occur if adequate vegetative cover is maintained. Cattle currently graze in the expansion area and the change to elk grazing is not expected to significantly change the existing conditions.

If vegetative cover is reduced significantly, the game farm operation could meet the definition of an "animal feeding operation" (ARM 17.30.1304(3)). If water containment structures are needed on the project site to control runoff and do not have the capacity for the 25-year, 24-hour storm, a "concentrated animal feeding operations" (CAFO) permit must be obtained to permit the discharge. A CAFO permit, however, probably would not be required for the 40-Bar Ranch game farm expansion.

- 3(f) Domestic elk fecal matter and nutrient-enriched water may have a minor effect on the quality of groundwater and/or surface water in the vicinity of the game farm, primarily during periods of snowmelt, flooding, and major precipitation events. Increased nutrient and sediment levels may occur in the ditches that extend through the game farm area and ultimately to the Big Hole River; however, most water in the ditches is consumed, evaporates, or infiltrates to groundwater rather than directly discharges back to the river. Due to the existing cattle grazing on the proposed expansion area, the change to elk grazing is not expected to significantly change the existing conditions.

NO ACTION:

Current hydrologic conditions are not expected to change under the No Action Alternative; cattle are likely to continue grazing in the expansion area if the expansion fence is not constructed.

CUMULATIVE EFFECTS:

The general area is heavily used for ranching activities. These activities do cause increased sediment and nutrient loading to surface water in the valley. The proposed change to elk grazing in the expansion area, however, is not expected to significantly change hydrologic conditions at the game farm site. Therefore, the cumulative effect of using the 22-acre site for a game farm would not cause any cumulative effects on water resources.

COMMENTS:

Due to potential minor impacts identified above from increased erosion, runoff, and elk fecal matter, several mitigation measures are recommended. Other water quality protection practices may be required by the Montana Department of Environmental Quality (DEQ) if it is determined that a CAFO permit is necessary. Refer to "Guide to Animal Waste Management and Water Quality Protection in Montana" (DEQ 1996) and "Common Sense and Water Quality, A Handbook for Livestock Producers" (Montana Department of Health and Environmental Sciences, 1994) for further information on mitigation measures and CAFO permits. The following management practices are recommended to minimize the risk of discharging pollutants to state water:

Required Stipulations: None.

Recommended Mitigation Measures:

- Maintain a reasonable stocking rate in the game farm area to mitigate potential impacts from erosion and fecal matter. Potential water quality impacts also could be minimized by disposing dead animals and excess fecal material at a site that is isolated from surface water and groundwater (disposal must meet county regulations for solid waste).
- For any areas that may have erosion and sedimentation problems, utilize best management practices (BMPs) where surface water could enter the ditches that ultimately reach the Big Hole River. The BMPs may include earth berms, straw bale dikes, vegetative buffer zones, and/or silt fences.

REFERENCES:

Montana Department of Environmental Quality (DEQ), 1996. Guide to Animal Waste Management and Water Quality Protection in Montana. Helena, MT.

Montana Department of Health and Environmental Sciences (DHES), 1994. Common Sense and Water Quality, A Handbook for Livestock Producers. Water Quality Division. Helena, MT.

Montana Department of Natural Resources and Conservation (DNRC), 1997. Computer File Search of Water Rights. Helena DNRC office. November 1997.

PHYSICAL ENVIRONMENT

4. <u>VEGETATION</u> Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Changes in the diversity, productivity or abundance of plant species?			X		Yes	4(a)
b. Alteration of a plant community?			X		Yes	4(b)
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X		Yes	4(e)

AFFECTED ENVIRONMENT:

The proposed game farm expansion area is located on the bottomlands of the Big Hole River. The expansion area is primarily comprised of a grassland meadow (8 acres) and an open willow/sedge riparian area (4 acres). The grassland meadow is dominated by native and introduced pasture grasses and can be flood irrigated. This section of the proposed expansion area would be fenced separately as a single pasture. It is slightly higher elevation (1 to 2 feet) than the proposed adjacent willow/sedge riparian pasture and the existing game farm enclosure. Estimated productivity of this site based on harvested hay yield is 2 to 2.5 tons per acre (M. Peterson, pers. comm.). This proposed meadow pasture is crossed by a small stock watering ditch (3-foot width) that is dry during non-irrigation periods.

The proposed riparian area pasture is dominated by native sedges and willows. The willows in this area have been recently thinned with heavy equipment. This proposed pasture is crossed by a large irrigation ditch (20-foot width) and maintains at least some flow during all seasons. However, the flow during non-irrigation periods is not sufficient to support a well developed aquatic community. The presence of willows and sedges in this pasture are indicative of seasonal flooding from snow melt and excessive irrigation water. Herbaceous productivity in sedge dominated areas of this proposed pasture is estimated to be similar to the meadow pasture. Both areas are currently grazed by cattle during non-irrigation periods.

PROPOSED ACTION:

- 4(a) The willow/sedge pasture of the proposed game farm expansion has already been cleared of many willows to accommodate the proposed fence construction in this area. Based on the impacts observed at the existing game farm, browsing of willows by elk in the proposed willow/sedge pasture would result in additional impacts to willows. Intensive browsing can alter willow growth form and possibly result in loss of some willows. In addition, the herbaceous vegetation in both the proposed willow/sedge and grassland meadow pastures may be substantially altered by elk grazing. The existing game farm enclosure contains barren areas devoid of vegetation, and the grasses and sedges in other areas are intensively grazed. Depending upon stocking density and season of use the proposed expansion pastures may show similar impacts to the herbaceous vegetation.
- 4(b) The proposed game farm would alter both the overstory and understory plant communities within the proposed expansion area. These impacts are described in 4(a). There would be a decrease in shrub and grass cover and an increase in bare ground. These impacts may be mitigated to a certain degree if actual elk numbers remain between 20 and 30 animals and a deferred grazing system is developed for the existing and proposed pastures. However, if elk numbers increase to the permitted level (60) vegetation within the expansion pastures would be expected to look

similar to the existing pasture described above. Overall, the alteration of these plant communities is considered minor due to the limited size of the proposed game farm expansion area.

The overall proposed stocking rate of 0.55 acres per adult elk is likely to exceed the productive potential of the existing game farm and the proposed game farm expansion. An estimated 88,000 pounds of forage may be produced within the existing game farm and the proposed expansion areas. Over an extended period, productivity of this site would be expected to decrease due to intensive grazing and browsing by domestic elk. Approximately 160,600 pounds of forage would be required to sustain 40 adult elk for one year. Under proper grazing management (50% forage utilization), the proposed game farm would yield only about 44,000 pounds of forage. Supplemental feed for the elk would be required during a considerable portion of the year.

- 4(e) The proposed game farm site contains very few noxious weeds and is currently dominated by native vegetation or tame pasture grasses purposely planted in this area. Under the intensive stocking densities proposed for this game farm, it is possible that some areas of bare soil may develop within the proposed expansion area and increase the opportunity for establishment of weeds.

NO ACTION:

The No Action Alternative would likely result in the continuation of the present management. Cattle would be grazed on the proposed expansion area during non-irrigation periods, and the grassland meadow pasture would be used for hay production during summer.

CUMULATIVE EFFECTS:

Utilization of the 12-acre site for expansion of the game farm would not significantly change agricultural production in this area.

COMMENTS:

Required Stipulations: None

Recommended Mitigation Measures:

Supplemental feed should be provided to the elk to reduce the probability of overgrazing the herbaceous layer.

REFERENCES:

Peterson, Melvin. 1997. Game Farm Owner. Personal communication with Dr. Craig Knowles, FaunaWest Wildlife Consultants during December 1997.

PHYSICAL ENVIRONMENT

5. <u>FISH/WILDLIFE</u> Would the Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Deterioration of critical fish or wildlife habitat?			X		Yes	5(a)
b. Changes in the diversity or abundance of game species?			X		Yes	5(b)
c. Changes in the diversity or abundance of nongame species?			X		Yes	5(c)
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?			X		Yes	5(e)
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?		X				
h. Increased risk of contact between game farm animals and wild game?				X	Yes	5(h)
i. Increased risk to wildlife health from disease?				X	Yes	5(h)

AFFECTED ENVIRONMENT:

The proposed game farm expansion site is located in the Big Hole River Valley and is currently used to grow grass hay during spring and summer and to pasture cattle during the fall and winter. The grassland meadow area is dominated by native and introduced pasture grasses, and the willow/sedge riparian habitat is dominated by native willows and sedges.

The proposed game farm expansion area is situated within summer/fall elk range (**Figure 3**). Approximately 600 to 700 elk summer along the bottomlands of the Big Hole River between Highway 43 on the north and the town of Jackson on the south (Fager, pers. comm.). As many as 200 elk may occur within the immediate vicinity of the proposed game farm expansion area. There is some dispersal of elk out of this area into adjacent mountain ranges during the rut and hunting season. As snow accumulates during late fall and winter elk migrate out of the Big Hole Valley and many of these elk move into the North Fork of the Salmon River in Idaho. Some elk may also move to lower elevations along the lower Big Hole River. In general, the Big Hole Valley and adjacent mountains are too high an elevation for significant numbers of elk to winter in this area. Due to the extensive seasonal migrations of these elk, it is considered an interstate herd.

The upper Big Hole Valley is considered one of the top three areas in Montana for moose (**Figure 3**). More than 100 moose utilize the willow/sedge bottomlands of the Big Hole River as year-long range (Fager, pers. comm.). Moose in the Big Hole Valley may also move into adjacent mountain ranges and make use of the coniferous habitats and riparian habitat associated with mountain streams. Although these moose tend to be solitary and range over extensive areas, up to 20 individuals may be observed in a group in willow bottomland habitat during winter.

The Big Hole River valley is low density white-tailed deer and mule deer summer range (Fager, pers. comm.) (**Figure 3**). During most winters, this area is too high an elevation for deer to successfully winter in. Resident populations of black bears and mountain lions occur in the Big Hole Valley and adjacent mountain ranges. Although these species are generally associated with coniferous habitat and rough topography, they are capable of using the willow bottomlands along the Big Hole River on an opportunistic basis.

Bald eagles (Federally listed threatened species) are migratory through the Big Hole Valley during fall and spring. Bald eagles are seasonal residents of the Big Hole Valley as well. No bald eagle nests are known to occur within the proposed game farm expansion area. However, an abandoned/inactive bald eagle nest exists 9 to 10 miles northeast of the project area (Fager, pers. comm.). Migratory peregrine falcons may also pass through this area during fall and spring. Gray wolves (threatened) have been documented in the immediate area of the proposed game farm expansion area. These wolves are associated with wolves recently reintroduced to Idaho and are classified as experimental and non-essential by the U.S. Fish and Wildlife Service (Fager pers. comm.). Grizzly bears (Federally listed threatened species) potentially may pass through the Big Hole Valley as transient individuals on rare occasions.

The Big Hole River contains arctic grayling (Oswald, pers. comm.). This native fish species is classified as a candidate for Federal listing as threatened species with a warranted but precluded ruling. The U.S. Fish and Wildlife Service has given FWP until year 2002 to recover grayling in the Big Hole River and other Montana rivers. Grayling occur in the Big Hole River with a patchy distribution. Relatively high grayling density occurs near Wisdom and Jackson, but that portion of the Big Hole River adjacent to the proposed game farm expansion contains few grayling. Dewatering of the Big Hole River during late summer to provide stock water has been identified as a major impact on the Big Hole grayling.

There are no other Federally listed threatened and endangered species expected to occur in this area.

PROPOSED ACTION:

- 5(a) The Proposed Action plans to expand the existing 10-acre game farm to a total of 22 acres by adding 4- and 8-acre pastures. The game farm would be permitted for 60 domestic elk, but the actual number may be less (Peterson, pers. comm.). When completed, wild elk, moose and deer would be excluded from approximately 12 acres (22 acres total) of bottomland habitat. This habitat is widely distributed along the Big Hole River and the loss of 12 additional acres of suitable elk, moose and deer habitat would not be a significant loss. In addition, the proposed expansion area is immediately adjacent to the Peterson Ranch headquarters and this area probably receives very little use by wild ungulates due the presence of people, dogs, and livestock.

Some nutrient enriched water runoff (effluence) during snow melt and major storm events would occur where elk might be fed or otherwise concentrate. In addition, the willow/sedge pasture would be partly flooded during the irrigation season. Groundwater is very shallow in this area, especially during the spring/early summer seasons. The proposed expansion area is currently used for similar purposes with cattle and there would be no net increase in nutrient enriched runoff over the existing conditions. There would be no expected impacts to aquatic systems above existing conditions due to effluence resulting from the proposed game farm expansion.

- 5(b) Wild elk, moose and deer would be fenced out of an additional 12 acres of bottomland habitat. This area is used as summer/fall range by elk and deer, and this habitat is not limiting during this period. Although moose are year-long residents in this valley, the loss of 12 acres of habitat is not significant. The presence of the 12-acre enclosure together with the existing 10-acre enclosure might influence local movements of a few wild ungulates but it would not influence populations.

- 5(c) Over the long-term, elk would be expected to severely hedge or kill many of the willows in the willow/sedge pasture. There would be a minor loss of habitat for neotropical migrant bird species. This will be partly mitigated by restricting elk use of this pasture during the spring and early summer when the pasture is flooded.
- 5(e) The presence of the 12-acre enclosure together with the existing 10-acre enclosure might influence local movements of a few wild ungulates forcing them to reroute their daily movement around the exterior enclosure fence. However, the proposed game farm is sufficiently small that it will have minimal affect.
- 5(h) There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease or meningeal worm, and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. It is also possible that diseases and parasites carried by wild elk could be introduced to domestic elk. Ingress of wild elk or deer would likely result in the destruction of the trespassing animals. Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) affect the human environment by reducing the number of wild deer and elk available for hunting or exposing hunters to diseases that are contagious to humans as well. Although release of a contagious disease in the wild could severely impact native wildlife populations, the risk of disease transmission from domestic elk to wild elk is considered low and can be minimized by routine disease surveillance of the herd and maintenance of game proof fences.

This analysis assumes that all domestic elk entering the enclosure have been genetically screened or otherwise certified that they do not carry red deer genes. If not, there is a risk that ingress/egress may lead to genetic pollution of the wild elk population.

Brucellosis and tuberculosis are potentially transmittable from elk to cattle and livestock and wildlife. The risk of disease being passed from domestic elk to domestic livestock would be minimal if fence integrity is maintained and appropriate mitigation measures are followed. The potential for disease transmission to domestic livestock and wildlife from game farm animals can also be mitigated through DoL disease testing requirements. All animals placed on this game farm would be required to be tested for tuberculosis at the time of import, purchase and/or transportation to the game farm. A test for brucellosis is required for all Cervids that are sold or moved within the state, and is required for all game farm animals imported into Montana. Each game farm is required to have an isolation pen (quarantine facility) on the game farm to isolate animals that are imported or become ill. The state veterinarian can require additional testing and place herds under strict quarantine should problems arise. Routine brucellosis and tuberculosis testing requirements for game farm animals offer a measure of surveillance that minimizes that risk. Failure to comply with these requirements is grounds for license revocation.

NO ACTION:

No wildlife related impacts are expected to occur under the No Action Alternative. A livestock grazing and farming operation of this area would be expected to continue under the No Action Alternative.

CUMULATIVE EFFECTS:

The fencing of 12 acres of bottomland habitat would result in approximately 22 acres of land being fenced to exclude wild ungulates and it would create a barrier to free passage through this area slightly more than ¼-mile long. However, the presence of the ranch headquarters at this location probably has already discouraged deer, elk and moose use of the proposed expansion area and cumulative impacts to wildlife would be extremely minor. Loss of this habitat is not expected to be important because it is relatively abundant in the Big Hole Valley.

COMMENTS:

The Proposed Action includes several measures to mitigate potential problems in providing a game-proof fence at the game farm site, as described below:

- Special heavy duty fencing would be constructed where the proposed game farm fencing would cross the Huntley irrigation ditch. This fencing would be of similar construction to that used over the ditch in the existing game farm. This fence structure would allow adjustment of the fence height as water depth changes in the ditch. Ingress of wild animals into the game farm area would be prevented using this fence design, and potential damage to the fence from woody debris would be minimized.
- Snow removal would be performed along the perimeter fence during winters of high snowpack if the height of the fence above the compacted snow level becomes sufficiently reduced to permit ingress of wild ungulates into the enclosure.

Two stipulations are required to reduce predicted impacts from ingress/egress. Other mitigation measures are recommended to minimize potential impacts to free-ranging wildlife and fish species.

Required Stipulations:

- (a) *Report ingress of any wild game animals and predators (i.e., bear, lion, and coyote) or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress occurred.*

The above stipulation is imposed to mitigate risk to wildlife posed by the proposed game farm. Information required by the stipulation in the event of ingress or egress would help both the applicant and FWP to address ingress/egress and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife health.

- (b) *Corner posts and brace posts in the westernmost 4-acre expansion pen must be constructed of steel and set in ground at least 3.5 feet below grade and backfilled with concrete to mitigate risk to fence integrity from water/frost heaving, erosion, and rotting.*

The above stipulation is required to mitigate potentially significant fence integrity problems as evidenced by the existing game farm fence. The game farm site is located in an area of shallow groundwater, periodic flooding, and freeze/thaw conditions. The required corner and brace post design would put a non-rotting post below the expected frost line, with a concrete backfill that would provide a footing for additional weight and cohesion to eliminate heaving and erosion problems. This mitigation measure would prevent ingress/egress occurrences due to fence integrity concerns.

Recommended Mitigation Measures:

The following standard game farm management practices would help to minimize impact to free ranging wildlife species. Implementation of these practices is highly recommended and should be considered a form of mitigation.

- Store hay, feed, and salt away from exterior fences or enclose in buildings.
- Feed game farm animals at interior portions of the enclosure and not along the perimeter fence.
- Remove dead animals, excess fecal material, and waste feed from the game farm and deposit at an approved site not likely to be used by humans, domestic animals, and wild animals.

- Inspect exterior game farm fence on a regular basis and immediately after events likely to damage fence to ensure its integrity with respect to trees, frost and water heaving, corrosion, burrowing animals, predators, and other game animals.
- If fence integrity or ingress/egress becomes a problem, adjust the fence as necessary, including double-fencing, increased post support, replacing damaged posts, or increased fence height.
- Surface water should be conserved during periods of low flow (i.e., July through September) to help maintain flow in the Big Hole River for fisheries, especially grayling. Measures to conserve water include using well water instead of ditch water for elk water source, and utilizing the westernmost pastures during low flow conditions to take advantage of yearround flow in the larger Huntley ditch.
- Risk of disease epidemic or heavy parasite infections among domestic elk can be minimized by maintaining a reasonable domestic elk stocking rate in relation to the enclosure size, and management of manure in accordance with DEQ (1996) guidance.

REFERENCES:

Fager, Craig. 1997. MT Fish, Wildlife and Parks Biologist. Personal communication with Dr. Craig Knowles, FaunaWest Wildlife Consultants during December 1997.

Montana Department of Environmental Quality (DEQ), 1996. Guide to Animal Waste Management and Water Quality Protection in Montana. Helena, MT.

Oswald, Dick. 1998. MT Fish, Wildlife and Parks Biologist. Personal communication with Dr. Craig Knowles, FaunaWest Wildlife Consultants during January 1998.

Peterson, Melvin. 1997. Game Farm Owner. Personal communication with Dr. Craig Knowles, FaunaWest Wildlife Consultants during December 1997.

HUMAN ENVIRONMENT

6. NOISE EFFECTS Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Increases in existing noise levels?			X		Yes	6(a)
b. Exposure of people to severe or nuisance noise levels?		X				

AFFECTED ENVIRONMENT:

Little noise occurs in the general game farm area because of the relatively small game farm operation, sparse population, and lack of other activities in this area that would generate noise.

PROPOSED ACTION:

- 6(a) The Proposed Action would result in a minor short-term increase in existing noise levels from fence construction, land clearing, and other activities conducted to develop the game farm expansion area. Shooting activities, if they occur, also would generate some additional noise. The nearest residence to the game farm expansion that is not one of the applicants/owners is located slightly over 1 mile to the north.

NO ACTION:

No impacts to existing noise levels are expected from the No Action Alternative.

CUMULATIVE EFFECTS:

No additional impacts from past, present or reasonably foreseeable activities near the proposed game farm expansion are anticipated.

COMMENTS:

Due to the distance to the nearest residence and overall sparse population in the area, noise generated from expansion of the game farm operation should not cause a problem. No mitigation measures are recommended with respect to noise.

HUMAN ENVIRONMENT

7. <u>LAND USE</u> Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the Proposed Action?		X				
d. Conflict with any existing land use that would be adversely affected by the Proposed Action?		X				
e. Adverse effects on or relocation of residences?		X				

AFFECTED ENVIRONMENT:

Current use of the expansion area is irrigated, native hay production (**Figure 2**). The area is not zoned for a specific use (Hartz 1997) and is currently utilized by wild game.

PROPOSED ACTION:

The proposed game farm expansion would be consistent with existing land uses. The use of the proposed expansion area for additional elk may increase the value of the land.

NO ACTION:

If the proposed expansion area is not developed, use of the site would likely continue for cattle pasture.

CUMULATIVE EFFECTS:

Land use described in the Proposed Action is consistent with existing land use in the vicinity of the proposed game farm expansion area. Because no proposals or applications for future development in the vicinity of the proposed game farm are currently on file with Beaverhead County, and no past or present activities have adversely affected the game farm expansion area, no potential cumulative effects on land use from the Proposed Action and past, present and reasonably foreseeable actions to land use are anticipated.

COMMENTS:

Because impacts to land use are none to potentially positive, no mitigation measures are recommended.

REFERENCES:

Hartz, Rick. 1997. Beaverhead County Planner. Personal communication with Holly Kuder, Maxim Technologies, Inc. December 1997.

HUMAN ENVIRONMENT

8. RISK/HEALTH HAZARDS Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Risk of dispersal of hazardous substances (including, but not limited to chemicals, pathogens, or radiation) in the event of an accident or other forms of disruption?		X				
b. Creation of any hazard or potential hazard to domestic livestock?			X		Yes	8(b)
c. Creation of any hazard or potential hazard to human health?			X		Yes	8(c)

PROPOSED ACTION:

- 8(b) Brucellosis and tuberculosis are potentially transmittable from elk to cattle and cattle to elk. The risk of disease being passed from domestic elk to domestic livestock would be minimal if the fence integrity is maintained and appropriate mitigation measures are followed. The potential for disease transmission to domestic livestock from game farm animals is also mitigated through Department of Livestock disease testing requirements. All animals placed on this game farm would be required to be tested for tuberculosis at the time of import, purchase and/or transportation to the game farm. A test for brucellosis is required for all Cervids that are sold or moved within the state, and is required for all game farm animals imported into Montana. Each game farm is required to have an isolation pen (quarantine facility) on the game farm to isolate any animals that are imported or become ill. The state veterinarian can require additional testing and place herds under strict quarantine should problems arise.
- 8(c) If tuberculosis or brucellosis were to be transmitted from domestic elk to wild elk and deer, hunters field dressing wild elk and deer would be subject to some risk of infection. Veterinarians and meat cutters working with diseased game farm animals are at risk of becoming infected with brucellosis or tuberculosis. Risk to human health from diseased animals could be significant. Spread of a contagious wildlife disease may directly or indirectly (depending upon the nature of the disease) affect the human environment by reducing the number of wild deer available for hunting or exposing hunters to diseases that are contagious to humans as well. Shooting activities on the game farm site, if they occur, are expected to have little risk to humans because the nearest residence that is not one of the game farm applicants/owners is slightly over 1 mile away.

NO ACTION:

No impacts or risks would occur from health hazards under the No Action Alternative.

CUMULATIVE EFFECTS:

No additional impacts from past, present or reasonably foreseeable activities near the proposed game farm expansion are anticipated.

COMMENTS:

Required Stipulations: None.

Recommended Mitigation Measures:

The mitigation measures recommended in Section 5 (*Fish/Wildlife*) are applicable to this section. In addition, risk of disease epidemic or heavy parasite infections among domestic elk can be minimized by maintaining a reasonable domestic elk stocking rate in relation to the enclosure size, management of manure in accordance with DEQ (1996) guidance, and adherence to disease testing requirements.

REFERENCES:

Montana Department of Environmental Quality (DEQ), 1996. Guide to Animal Waste Management and Water Quality Protection in Montana. Helena, MT.

HUMAN ENVIRONMENT

9. COMMUNITY IMPACT Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?			X			9(c)
d. Changes in industrial or commercial activity?		X				
e. Changes in historic or traditional recreational use of an area?		X				
f. Changes in existing public benefits provided by affected wildlife populations and wildlife habitats (educational, cultural or historic)?		X				
g. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				

AFFECTED ENVIRONMENT:

The proposed game farm expansion would be located in a rural area adjacent to pasture land used for hay production and cattle grazing. The nearest towns are Wisdom and Jackson, located about 11 miles to the north and 6 miles to the south, respectively. The game farm site is surrounded by private land (**Figure 1**).

PROPOSED ACTION:

9(c) As a result of the distance to the nearest community, no adverse impacts to the community are expected from expansion of the proposed game farm. No employees would be hired as a result of the Proposed Action. While the Proposed Action may increase the income level for the applicant and increase taxes paid to the county, these increases would be relatively minor with respect to the community.

NO ACTION:

No adverse impacts to the community would result from the No Action Alternative.

CUMULATIVE EFFECTS:

No adverse impacts to the community are expected to result from the Proposed Action and past, present and reasonably foreseeable activities in the vicinity of the proposed game farm.

COMMENTS:

No mitigation measures are recommended with respect to community impacts.

HUMAN ENVIRONMENT

10. <u>PUBLIC SERVICES & TAXES</u> Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. A need for new or altered government services (specifically an increased regulatory role for FWP and Dept. of Livestock)?			X		No	10(a)
b. A change in the local or state tax base and revenues?		X				
c. A need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				

PROPOSED ACTION:

- 10(a) FWP and DoL would be required to have a minor increase in work load associated with the expanded game farm for increased fence and animal inspections and monitoring. For the Proposed Action, the increase in use of agency resources is estimated to cost the State of Montana \$7,000 to \$9,000 for the licensing process, and minimal cost for additional monitoring and administrative activities.

NO ACTION:

No additional taxes would be collected from the applicant under the No Action Alternative.

CUMULATIVE EFFECTS:

No adverse cumulative effects to public services, taxes, and utilities are anticipated to result from the Proposed Action and past, present and reasonably foreseeable activities in the vicinity of the proposed game farm expansion.

COMMENTS:

No mitigation measures are recommended with respect to public services, taxes, and utilities.

REFERENCES:

Schultz, Luella. 1997. Department of Livestock, Animal Health Division. Memorandum to Maxim Technologies, October 27, 1997.

Tarrant, Betsy. 1997. Beaverhead County Assessor. Personal communication with H Kuder, Maxim Technologies, Inc. December, 1997

HUMAN ENVIRONMENT

11. AESTHETICS/RECREATION Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?		X				

AFFECTED ENVIRONMENT:

The proposed game farm expansion would be located in a rural area of southwestern Montana. The nearest towns are Wisdom, about 11 miles to the north, and Jackson, approximately 6 miles to the south. The game farm site is surrounded by private land (**Figure 1**) used for cattle grazing and hay production. Nearest public land is state-owned land located approximately 1 mile to the east. The closest residence to the game farm site that is not one of the game farm applicants/owners is located slightly over 1 mile to the north.

PROPOSED ACTION:

No adverse impacts to the public view, character of the neighborhood, or recreational opportunities in the area would result from the Proposed Action.

NO ACTION:

No adverse impacts to aesthetics or recreational opportunities in the area would result from the No Action Alternative.

CUMULATIVE EFFECTS:

No additional impacts from past, present and reasonably foreseeable activities near the proposed game farm are anticipated.

COMMENTS:

No mitigation measures are recommended with respect to aesthetics and recreation.

HUMAN ENVIRONMENT

12. <u>CULTURAL & HISTORICAL RESOURCES</u> Would Proposed Action result in:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Destruction or alteration of any site, structure or object of prehistoric, historic, or paleontological importance?	X				Yes	12(a)
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				

AFFECTED ENVIRONMENT:

No historic sites are recorded on the proposed game farm expansion based on a cultural resource file search by the State Historical Preservation Office (SHPO 1997).

PROPOSED ACTION:

12(a) According to SHPO (1997), there is a high likelihood of unknown or unrecorded cultural properties to be present on the game farm expansion site. The SHPO determination is based on the lack of previous inventory, the close proximity of the site to the Big Hole River, and the fact that sites are known to exist in nearby areas.

NO ACTION:

No impacts to unknown cultural resources are expected from the No Action Alternative unless other disturbances occur within the property.

CUMULATIVE EFFECTS:

No additional impacts from past, present and reasonably foreseeable activities near the proposed game farm are anticipated.

COMMENTS:

Required Stipulations: None.

Recommended Mitigation Measures:

- A cultural resource inventory should be conducted in order to determine whether or not cultural properties exist and if they will be affected.
- If archeological artifacts are observed during construction of the game farm fence or from other activities, work should stop in the area and the discovery reported to:

Montana Historical Society
Historic Preservation Office
1410 8th Avenue; P.O. Box 201202
Helena, Montana 59620
(406) 444-7715

If work stoppage in the area containing observed artifacts is not possible, record the location and position of each object, take photographs, and preserve the artifact(s).

REFERENCES:

Montana State Historic Preservation Office (SHPO), 1997. Letter from Phillip Melton (SHPO, Helena, MT) to Holly Kuder (Maxim Technologies, Inc.), dated December 15, 1997.

SUMMARY

13. SUMMARY Would the Proposed Action, considered as a whole:	POTENTIAL IMPACT				CAN IMPACT BE MITIGATED	COMMENT INDEX
	UNKNOWN	NONE	MINOR	SIGNIFICANT		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources which create a significant effect when considered together or in total).		X				
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?				X	Yes	13(b)
c. Potentially conflict with the substantive requirements or any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts would be proposed?	X					13(d)
e. Generate substantial debate or controversy about the nature of the impacts that would be created?			X		Yes	13(d)

PROPOSED ACTION:

- 13(b) There is an undetermined potential of domestic elk carrying or becoming infected with a contagious wildlife disease or parasite such as tuberculosis, chronic wasting disease, or meningeal worm and then coming in contact (through-the-fence, nose-to-nose, nose-to-soil, or ingress/egress) with wild deer, elk, or other wildlife. Release of a contagious disease in the wild could severely impact native wildlife populations. It is also possible that disease and parasites carried by wild elk could be introduced to domestic elk. Ingress of wild elk, deer, and moose would likely result in the destruction of the trespassing animals.

Spread of a contagious wildlife disease may directly or indirectly (depending on the nature of the disease) affect the human environment by reducing the number of wild deer and elk available for hunting, or exposing hunters to diseases that are contagious to humans as well.

- 13(d) The nature of impacts to wildlife from elk game farms is currently under debate in Montana and other states. The following issues are of the greatest concern:

- Disease transmission from game farm elk to wildlife is possible if the game farm elk are diseased and have an opportunity to come into contact with wild elk or deer.
- Hybridization of Montana's game species resulting from the ingress/egress of animals on game farms.
- Potential for wild animals to ingress into the game farm. Ingressing elk and deer are generally killed, typically by FWP wardens, to prevent potential disease transmittal. Ingressing mountain lions and black bears may be immobilized and removed.
- Theft of wild animals for financial gain on game farms.

These issues are particularly controversial when game farms block migration routes or consume significant areas of land historically utilized by wild game. Inadequate perimeter fencing and fence monitoring on the part of the game farm operator can also lead to ingress and egress events and nose-to-nose contact between wild game and game farm animals. Because the proposed 40-Bar Ranch Game Farm area is too small to effectively block big game migration routes or consume a significant portion of land utilized by wild game, the controversial nature of the Proposed Action is minor.

SUMMARY EVALUATION OF SIGNIFICANCE CRITERIA

- a. **Does the Proposed Action have impacts that are individually minor, but cumulatively considerable? (A project may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)**

No, the year-long use of the enclosure by up to 60 elk would not result in any significant cumulative impacts.

- b. **Does the Proposed Action involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?**

Yes. An unlikely, but extremely hazardous event should it occur, would be the spread of a disease or parasite from domestic elk to wild ungulates. The risk of this event occurring can be reduced by following the mitigations listed in Sections 3, 5 and 8 (Water, Fish/Wildlife, and Risk/Health Hazards, respectively) and regular disease surveillance.

- c. **Description and analysis of reasonable alternatives (including the No Action Alternative) to the Proposed Action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:**

No Action Alternative: The No Action Alternative would avoid all potential impacts listed above for the proposed expansion area. This site would likely be used for hay production, and be grazed by domestic cattle should the No Action Alternative be selected. The No Action Alternative would probably not result in exclusion of wildlife from this site.

- d. **Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:**

This section provides an analysis of impacts to private property by proposed restrictions or stipulations in this EA as required under 75-1-201, MCA, and the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The analysis provided in this EA is conducted in accordance with implementation guidance issued by the Montana Legislative Services Division (EQC 1996). A completed checklist designed to assist state agencies in identifying and evaluating proposed agency actions, such as imposed stipulations, that may result in the taking or damaging of private property, is included in **Appendix A**. Mitigation measures described in this section address both minor and significant impacts. FWP would require stipulations to mitigate all potentially significant impacts from the Proposed Action. Most potential minor impacts from the Proposed Action are addressed as mitigation measures that are strongly recommended, but not required.

Required Stipulation #1

Report the ingress of any wild game animals and predators (i.e., bear, lion, and coyote) or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress occurred.

Restriction on Private Property Use From Imposing Stipulation No. 1 - This stipulation restricts the use of private property by effectively requiring that the proposed game farm be monitored at least once daily for ingress or egress events. The stipulation is consonant with the current FWP requirement to report egress events immediately [ARM 12.6.1517(2)].

Alternatives to Stipulation No. 1 - *Do not report ingress and egress events to FWP immediately.*

This stipulation would not adequately address the increased risk to wildlife health. Ingressing wild animals must be detected immediately to prevent contact with game farm animals.

Benefits from Imposing Stipulation No. 1 - This stipulation is imposed to mitigate predicted risk to wildlife health posed by the proposed game farm. Information provided by the stipulation would help the applicant and FWP to address ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation, in addition to existing FWP fencing and wildlife protection requirements, would effectively reduce the risk to wildlife health.

Types of Expenditures Stipulation No. 1 Would Require - The stipulation to require immediate notice of ingress and egress events would not impose any additional expenditures beyond those necessary to report egress events in accordance with ARM 12.6.1517(2).

Stipulation No. 1's Effect on Property Values - None

Required Stipulation #2

Corner posts and brace posts in the westernmost 4-acre expansion pen must be constructed of steel and set in ground at least 3.5 feet below grade and backfilled with concrete to mitigate risk to fence integrity from water/frost heaving, erosion, and rotting.

Restriction on Private Property Use from Stipulation No. 2

This stipulation does not restrict the use of private property use.

Alternatives to Stipulation No. 2 - *Use wood posts in the 4-acre expansion pen and do not set fence posts 3.5 feet below ground, nor set in concrete.*

This stipulation would not adequately address the potential fence integrity problems due to shallow groundwater, flooding, rotting wood, and freeze/thaw conditions. Ingress/egress must be prevented by providing an adequate game proof fence.

Benefits from Imposing Stipulation No. 2 - This stipulation is imposed to mitigate potential fence integrity problems. The stipulation would help prevent ingress and egress incidents and to minimize contact between wild and domestic animals. This stipulation also would reduce the risk to wildlife health.

Types of Expenditures Stipulation No. 2 Would Require - The stipulation to require use of steel corner and brace posts set 3.5 feet into the ground and backfilled with concrete for the 4-acre expansion pen would add some additional labor and supplies (i.e., steel posts and concrete) to properly set the fence posts. An estimated additional cost of \$500 to \$1,000 would be required for the stipulated game farm enclosure.

Stipulation No. 2's Effect on Property Values - None

PART III. NARRATIVE EVALUATION AND COMMENT

Wildlife use of the area and potential for through-the-fence contact with game farm animals (consider year-around use, traditional seasonal habitat use, and location of travel routes and migration corridors).

Through the fence contact: The proposed game farm is located in excellent summer/fall elk habitat and excellent yearlong moose habitat. Some mule and white-tailed deer also occur in the area during summer and fall. Based on relative density and behavior of these wild ungulates, nose-to-nose contact is likely to occur between wild and domestic elk, and less likely to occur between domestic elk and moose, and unlikely to occur between domestic elk and wild deer. During the rut, wild elk in the general area of the game farm may actually be attracted to the domestic elk within the enclosure. The most likely encounter would be wild and domestic bulls fighting through the fence. Transmission of disease or parasites may occur during nose-to-nose contact, nose-to-body contact, and by contacting vegetation and feces along the fence line. Disease transmission may occur from wild ungulates to domestic elk and from domestic elk to wild ungulates. Diseases such as tuberculosis are highly contagious and can be easily transmitted between domestic elk and wild ungulates and domestic ungulates. Tuberculosis can also be transmitted to humans and is a serious health risk.

Risk of disease transmission can be reduced by maintaining the integrity of the enclosure fence, by maintaining a healthy domestic elk population, and by following the above listed mitigation recommendations. Maintaining a healthy elk herd requires regular testing and surveillance for diseases. If the game farm is managed properly, the risk of disease transmission from domestic elk to wild ungulates would likely be minimal.

Potential for escape of game farm animals or ingress of wildlife (consider site-specific factors that could reduce the effectiveness of perimeter fences built to standards outlined in Rule 12.6.1503A, including steepness of terrain, winter snow depths/drifts, susceptibility of fences to flood damage, etc.).

Fence integrity: Fencing for the proposed expansion area would consist of 8-foot high, 6-inch mesh, high-tensile big game fencing. Corner posts and brace posts in the westernmost 4-acre expansion pen would be required to consist of 12-foot long, steel posts set at least 3.5 feet into the ground and back-filled with suitable concrete to prevent post rotting and minimize movement from water/frost heaving and erosion. Support posts would be spaced at no greater than 24-foot intervals and would consist of 12-foot long, 3- to 4-inch diameter treated wooden posts driven 3.5 feet into the soil. All exterior gates would be constructed of 2-inch diameter structural metal tubing, 8 feet high, and reinforced with cattle paneling. Gates would have a double latch and single chain lock. Special heavy duty, adjustable steel fencing will be constructed where the proposed fence crosses Huntley ditch. This fencing should be of similar construction to that used over the ditch in the existing game farm. The proposed 12-acre enclosure site is located on level bottomland with excellent site potential for fence construction.

The required corner and brace post design would put a non-rotting post below the expected frost line (frost line depth approximately 3 feet) where groundwater is shallow and flooding occurs periodically. The purpose of the concrete backfill is to provide a footing that has the weight and cohesion between the post and surrounding native soil to eliminate heaving and erosion problems. Discussions with several people who have experience installing fence concur that the proposed fence post design should provide a long-lasting, non-heaving game proof fence.

The proposed enclosure site is located at an elevation of about 6,300 feet and the expected snow levels during normal winters would be 12-24 inches. However, this region periodically receives extreme winter weather and can accumulate 2 to 3 feet of snow. The proposed game farm has moderate to high potential for drifting during blizzards. The development of significant drifts will be dependent upon storm characteristics and topography. Under these extreme conditions the height of the fence above compacted snow level may be sufficiently reduced to permit ingress of wild ungulates into the enclosure to gain access of supplemental feed. However, only a few wild moose would be expected to use this area during periods of major winter storms. Domestic elk may also be able to leave the enclosure during periods of excessive snow cover, and removal of snow drifts from the either side of the fence in drift prone areas may be necessary during winter.

Proportion (%) of the total habitat area currently used by wildlife that would be enclosed or otherwise impacted.

The enclosure would exclude migratory wild elk and deer, and resident moose from only a minor portion (<1%) of the area they presently have access to. The enclosure of 12 acres of bottomland habitat would not seriously affect wild ungulates or other wildlife species population viability in this area.

PART IV. EA CONCLUSION

1. Based on the significance criteria evaluated in this EA, is an EIS required? YES / NO

No. The appropriate level of analysis for the Proposed Action is a mitigated EA because:

- all impacts of the Proposed Action have been accurately identified in the EA; and
- all identified significant impacts would be mitigated to minor or none.

2. Describe the level of public involvement for this project if any and, given the complexity and the seriousness of the environmental issues associated with the Proposed Action, is the level of public involvement appropriate under the circumstances?

Upon completion of the Draft EA, a notice is sent to adjoining landowners, local newspapers, and other potentially affected interests, explaining the project and asking for input during a 21-day comment period which extends from January 30, 1998 until 5 pm February 20, 1998. A Public Meeting will be held at 7:00 pm on February 11, 1998 at the Wisdom Ranger District. The Draft EA is also available to the public from the FWP office in Bozeman at the address and phone listed below and in the *Introduction* section of this EA, and through the State Bulletin Board System during the public comment period.

3. Duration of comment period if any: 21 days

4. Name, title, address and phone number of the Person(s) Responsible for Preparing the EA:

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APPENDIX A

PRIVATE PROPERTY ASSESSMENT CHECKLIST

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

The 54th Legislature enacted the Private Property Assessment Act, Chapter 462, Laws of Montana (1995). The intent of the legislation is to establish an orderly and consistent process by which state agencies evaluate their proposed actions under the "Takings Clauses" of the United States and Montana Constitutions. The Takings Clause of the Fifth Amendment of the United States Constitution provides: "nor shall private property be taken for public use, without just compensation." Similarly, Article II, Section 29 of the Montana Constitution provides: "Private property shall not be taken or damaged for public use without just compensation..."

The Private Property Assessment Act applies to proposed agency actions pertaining to land or water management or to some other environmental matter that, if adopted and enforced without compensation, would constitute a deprivation of private property in violation of the United States or Montana Constitutions.

The Montana State Attorney General's Office has developed guidelines for use by state agency to assess the impact of a proposed agency action on private property. The assessment process includes a careful review of all issues identified in the Attorney General's guidance document (Montana Department of Justice 1997). If the use of the guidelines and checklist indicates that a proposed agency action has taking or damaging implications, the agency must prepare an impact assessment in accordance with Section 5 of the Private Property Assessment Act. For the purposes of this EA, the questions on this checklist refer to the following required stipulation(s):

Report the ingress of any wild game animals and predators (i.e., bear, lion, and coyote) or egress of domestic elk to FWP immediately. The report must contain the probable reason why or how ingress/egress occurred.

Set steel corner posts and brace posts in the westernmost 4-acre expansion pen in ground at least 3.5 feet below grade and backfill with concrete to mitigate risk to fence integrity from water/frost heaving and erosion.

PRIVATE PROPERTY ASSESSMENT ACT CHECKLIST

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PRIVATE PROPERTY ASSESSMENT ACT?

YES	NO		
<u>X</u>	<u> </u>	1.	Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
<u> </u>	<u>X</u>	2.	Does the action result in either a permanent or indefinite physical occupation of private property?
<u> </u>	<u>X</u>	3.	Does the action deprive the owner of all economically viable uses of the property?
<u> </u>	<u>X</u>	4.	Does the action deny a fundamental attribute of ownership?
<u> </u>	<u>X</u>	5.	Does the action require a property owner to dedicate a portion of property or to grant an easement? [If the answer is NO , skip questions 5a and 5b and continue with question 6.]
<u> </u>	<u> </u>	5a.	Is there a reasonable, specific connection between the government requirement and legitimate state interests?
<u> </u>	<u> </u>	5b.	Is the government requirement roughly proportional to the impact of the proposed use of the property?
<u> </u>	<u>X</u>	6.	Does the action have a severe impact on the value of the property?
<u> </u>	<u>X</u>	7.	Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? [If the answer is NO , do not answer questions 7a-7c.]
<u> </u>	<u> </u>	7a.	Is the impact of government action direct, peculiar, and significant?
<u> </u>	<u> </u>	7b.	Has government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
<u> </u>	<u> </u>	7c.	Has government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if **YES** is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if **NO** is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.

